

Claims:

1 1. A method of operating a wireless transmitter to wirelessly transmit a data
 2 packet on a variable rate channel to a receiver, the method comprising:
 3 transmitting a first transmission block portion and a second transmission block
 4 portion to the receiver in a first transmission at a first data transmission rate; and
 5 when the receiver does not successfully decode the first transmission in a first
 6 decoding, transmitting a second transmission to the receiver at a second data transmission
 7 rate different from the first data transmission rate, wherein the second transmission includes
 8 the first transmission block portion.

1 2. The method of claim 1, further comprising, when the receiver does not
 2 successfully decode a combination of the first transmission and the second transmission in a
 3 second decoding, transmitting a third transmission to the receiver at the second data
 4 transmission rate, wherein the third transmission includes the second transmission block
 5 portion.

1 3. The method of claim 2, further comprising, when the receiver does not
 2 successfully decode a combination of the first transmission, the second transmission, and
 3 the third transmission in a third decoding, transmitting a fourth transmission to the receiver
 4 at a third data transmission rate that is different from both the first data transmission rate
 5 and the second data transmission rate, wherein the fourth transmission includes the first
 6 transmission block portion.

1 4. The method of claim 3, further comprising, when the receiver does not
 2 successfully decode a combination of the first transmission, the second transmission, the

third transmission, and the fourth transmission in a fourth decoding, transmitting a fifth transmission to the receiver at the third data transmission rate, wherein the fifth transmission includes the second transmission block.

5. The method of claim 4, wherein:
the second data transmission rate is less than the first data transmission rate; and
the third data transmission rate is less than the second data transmission rate.

6. The method of claim 1, wherein:
the transmitter is a base station; and
the receiver is a user terminal.

7. The method of claim 1, wherein:
the transmitter is a user terminal; and
the receiver is a base station.

8. A method of operating a wireless receiver to wirelessly receive a data packet on a variable rate channel from a transmitter, the method comprising:
receiving a first transmission from the transmitter at a first data transmission rate, wherein the first transmission includes a first transmission block portion and a second transmission block portion;
attempting to decode the first transmission in a first decoding; and
when the first decoding is not successful, requesting and receiving a second transmission from the transmitter at a second data transmission rate different from the first data transmission rate, wherein the second transmission includes the first transmission block

10 portion.

1 9. The method of claim 8, further comprising:
 2 attempting to decode a combination of the first transmission and the second
 3 transmission in a second decoding; and
 4 when the second decoding is not successful, requesting and receiving a third
 5 transmission from the transmitter at the second data transmission rate, wherein the third
 6 transmission includes the second transmission block portion.

1 10. The method of claim 9, further comprising:
 2 attempting to decode a combination of the first transmission, the second
 3 transmission, and the third transmission in a third decoding; and
 4 when the third decoding is not successful, requesting and receiving a fourth
 5 transmission from the receiver at a third data transmission rate that is different from both the
 6 first data transmission rate and the second data transmission rate, wherein the fourth
 7 transmission includes the first transmission block portion.

1 11. The method of claim 10, further comprising:
 2 attempting to decode a combination of the first transmission, the second
 3 transmission, the third transmission, and the fourth transmission in a fourth decoding; and
 4 when the fourth decoding is not successful, requesting and receiving a fifth
 5 transmission from the transmitter at the third data transmission rate, wherein the fifth
 6 transmission includes the second transmission block portion.

1 12. The method of claim 9, wherein:

2 the second data transmission rate is less than the first data transmission rate; and
3 the third data transmission rate is less than the second data transmission rate.

1 13. The method of claim 8, wherein:
2 the transmitter is a base station; and
3 the receiver is a user terminal.

1 14. The method of claim 8, wherein:
2 the transmitter is a user terminal; and
3 the receiver is a base station.

1 15. A method of operating a wireless transmitter to wirelessly transmit a data
2 packet to a receiver, the method comprising:
3 transmitting a first transmission to the receiver that includes data bits and first parity
4 bits; and
5 when the receiver does not successfully decode the first transmission in a first
6 decoding at a first decoding rate, transmitting a second transmission to the receiver that
7 includes the data bits and second parity bits, wherein the second parity bits are different
8 from the first parity bits.

1 16. The method of claim 15, further comprising, when the receiver does not
2 successfully decode a combination of the first transmission and the second transmission in a
3 second decoding at a second decoding rate, transmitting a third transmission to the receiver,
4 wherein the third transmission includes the first parity bits.

1 17. The method of claim 16, further comprising, when the receiver does not
2 successfully decode a combination of the first transmission and the third transmission in a
3 third decoding at the first decoding rate, transmitting a fourth transmission to the receiver,
4 wherein the fourth transmission includes the second parity bits.

1 18. The method of claim 15, wherein:
2 the transmitter is a base station; and
3 the receiver is a user terminal.

1 19. The method of claim 15, wherein:
2 the transmitter is a user terminal; and
3 the receiver is a base station.

1 20. A method of operating a wireless receiver to wirelessly receive a data packet
2 from a transmitter, the method comprising:
3 receiving a first transmission from the receiver that includes data bits and first parity
4 bits;
5 attempting to decode the first transmission at a first decoding rate; and
6 when the first decoding is unsuccessful, requesting and receiving a second
7 transmission from the transmitter that includes the data bits and second parity bits, wherein
8 the second parity bits are different from the first parity bits.

1 21. The method of claim 20, further comprising:
2 attempting to decode a combination of the first transmission and the second
3 transmission in a second decoding at a second decoding rate; and

4 when the second decoding is not successful, requesting and receiving a third
5 transmission from the transmitter, wherein the third transmission includes the first parity
6 bits.

1 22. The method of claim 21, further comprising:
2 attempting to decode a combination of the first transmission and the third
3 transmission in a third decoding at the first decoding rate; and
4 when the third decoding is not successful, requesting and receiving a fourth
5 transmission from the transmitter, wherein the fourth transmission includes the second
6 parity bits.

1 23. The method of claim 20, wherein:
2 the transmitter is a base station; and
3 the receiver is a user terminal.

1 24. The method of claim 20, wherein:
2 the transmitter is a user terminal; and
3 the receiver is a base station.

1 25. A method of operating a wireless transmitter to wirelessly transmit a data
2 packet on a variable rate channel to a receiver, the method comprising:
3 transmitting a first transmission to the receiver that includes a set of data bits coded
4 at a first coding rate; and
5 when the receiver does not successfully decode the first transmission in a first
6 decoding, transmitting a second transmission to the receiver that includes the set of data bits

7 coded at a second coding rate that is less than the first coding rate.

1 26. The method of claim 25, further comprising, when the receiver does not
 2 successfully decode the second transmission in a second decoding and does not successfully
 3 decode a combination of the first transmission and the second transmission in a third
 4 decoding, transmitting a third transmission to the receiver that includes the set of data bits
 5 coded at a third coding rate that is less than the second coding rate.

1 27. The method of claim 26, further comprising, when the receiver does not
 2 successfully decode the third transmission in a fourth decoding and does not successfully
 3 decode a combination of the first transmission, the second transmission, and the third
 4 transmission in a fifth decoding, transmitting a fourth transmission to the receiver that
 5 includes the set of data bits coded at a fourth coding rate that is less than the third coding
 6 rate.

1 28. The method of claim 25, wherein:
 2 the transmitter is a base station; and
 3 the receiver is a user terminal.

1 29. The method of claim 25, wherein:
 2 the transmitter is a user terminal; and
 3 the receiver is a base station.

1 30. A method of operating a wireless receiver to wirelessly receive a data packet
 2 on a variable rate channel from a transmitter, the method comprising:

3 receiving a first transmission from the transmitter, wherein the first transmission
4 includes a set of data bits coded at a first coding rate;
5 attempting to decode the first transmission in a first decoding;
6 when the first decoding is not successful, requesting and receiving a second
7 transmission from the receiver that includes the set of data bits coded at a second coding
8 rate that is less than the first coding rate; and
9 attempting to decode the second transmission in a second decoding.

1 31. The method of claim 30, further comprising, when the second decoding is
2 not successful:
3 soft combining the first transmission and the second transmission; and
4 attempting to decode a combination of the first transmission and the second
5 transmission in a third decoding.

1 32. The method of claim 31, further comprising, when the third decoding is not
2 successful:
3 requesting and receiving a third transmission from the receiver that includes the set
4 of data bits coded at a third coding rate that is less than the second coding rate; and
5 attempting to decode the third transmission in a fourth decoding.

1 33. The method of claim 32, further comprising, when the fourth decoding is not
2 successful:
3 soft combining the first transmission, the second transmission, and the third
4 transmission; and
5 attempting to decode a combination of the first transmission, the second

6 transmission, and the third transmission in a fifth decoding.

1 34. The method of claim 30, wherein:

2 the transmitter is a base station; and

3 the receiver is a user terminal.

1 35. The method of claim 30, wherein:

2 the transmitter is a user terminal; and

3 the receiver is a base station.

1 36. A base station that acts as a transmitter to wirelessly transmit a data packet
2 on a variable rate channel to a user terminal acting as a receiver, the base station
3 comprising:

4 an antenna;

5 a Radio Frequency unit coupled to the antenna; and

6 at least one digital processor coupled to the Radio Frequency unit that executes
7 software instructions causing the base station to:

8 transmit a first transmission block portion and a second transmission block portion
9 to the receiver in a first transmission at a first data transmission rate; and

10 when the receiver does not successfully decode the first transmission in a first
11 decoding, transmit a second transmission to the receiver at a second data transmission rate
12 different from the first data transmission rate, wherein the second transmission includes the
13 first transmission block portion.

1 37 A base station that acts as a transmitter to wirelessly transmit a data packet to

a user terminal acting as a receiver, the base station comprising:

- an antenna;
- a Radio Frequency unit coupled to the antenna; and
- at least one digital processor coupled to the Radio Frequency unit that executes software instructions causing the base station to:
 - transmit a first transmission to the receiver that includes data bits and first parity bits; and
 - when the receiver does not successfully decode the first transmission in a first decoding at a first decoding rate, transmit a second transmission to the receiver that includes the data bits and second parity bits, wherein the second parity bits are different from the first parity bits.

38. A base station that acts as a transmitter to wirelessly transmit a data packet to a user terminal acting as a receiver, the base station comprising:

- an antenna;
- a Radio Frequency unit coupled to the antenna; and
- at least one digital processor coupled to the Radio Frequency unit that executes software instructions causing the base station to:
 - transmit a first transmission to the receiver that includes a set of data bits coded at a first coding rate; and
 - when the receiver does not successfully decode the first transmission in a first decoding, transmit a second transmission to the receiver that includes the set of data bits coded at a second coding rate that is less than the first coding rate.

39. A user terminal that acts as a wireless receiver to wirelessly receive a data

packet on a variable rate channel from a base station acting as a transmitter, the user terminal comprising:

an antenna;

a Radio Frequency unit coupled to the antenna; and

a digital processor coupled to the Radio Frequency unit that executes software instructions causing the user terminal to:

receive a first transmission from the transmitter at a first data transmission rate, wherein the first transmission includes a first transmission block portion and a second transmission block portion;

attempt to decode the first transmission in a first decoding; and

when the first decoding is not successful, request and receive a second transmission from the transmitter at a second data transmission rate different from the first data transmission rate, wherein the second transmission includes the first transmission block portion.

40. A user terminal that acts as a wireless receiver to wirelessly receive a data packet from a base station acting as a transmitter, the user terminal comprising:

an antenna;

a Radio Frequency unit coupled to the antenna; and

a digital processor coupled to the Radio Frequency unit that executes software instructions causing the user terminal to:

receive a first transmission from the receiver that includes data bits and first parity bits;

attempt to decode the first transmission at a first decoding rate; and

when the first decoding is unsuccessful, request and receive a second transmission

11 from the transmitter that includes the data bits and second parity bits, wherein the second
12 parity bits are different from the first parity bits.

1 41. A user terminal that acts as a wireless receiver to wirelessly receive a data
2 packet from a base station acting as a transmitter, the user terminal comprising:
3 an antenna;
4 a Radio Frequency unit coupled to the antenna; and
5 a digital processor coupled to the Radio Frequency unit that executes software
6 instructions causing the user terminal to:
7 receive a first transmission from the transmitter, wherein the first transmission
8 includes a set of data bits coded at a first coding rate;
9 attempt to decode the first transmission in a first decoding;
10 when the first decoding is not successful, request and receiving a second
11 transmission from the receiver that includes the set of data bits coded at a second coding
12 rate that is less than the first coding rate; and
13 attempt to decode the second transmission in a second decoding.

1 42. A plurality of software instructions stored on a media that, upon execution by
2 a base station, cause the base station to act as a transmitter to wirelessly transmit a data
3 packet on a variable rate channel to a user terminal acting as a receiver, the plurality of
4 software instructions comprising:
5 a set of instructions executed by the base station that cause the base station to
6 transmit a first transmission block portion and a second transmission block portion to the
7 receiver in a first transmission at a first data transmission rate; and
8 a set of instructions executed by the base station that cause the base station to, when

9 the receiver does not successfully decode the first transmission in a first decoding, transmit
10 a second transmission to the receiver at a second data transmission rate different from the
11 first data transmission rate, wherein the second transmission includes the first transmission
12 block portion.

1 43. A plurality of software instructions stored on a media that, upon execution by
2 a base station, cause the base station to act as a transmitter to wirelessly transmit a data
3 packet to a user terminal acting as a receiver, the plurality of software instructions
4 comprising:

5 a set of instructions executed by the base station that cause the base station to
6 transmit a first transmission to the receiver that includes data bits and first parity bits; and

7 a set of instructions executed by the base station that cause the base station to, when
8 the receiver does not successfully decode the first transmission in a first decoding at a first
9 decoding rate, transmit a second transmission to the receiver that includes the data bits and
10 second parity bits, wherein the second parity bits are different from the first parity bits.

1 44. A plurality of software instructions stored on a media that, upon execution by
2 a base station, cause the base station to act as a transmitter to wirelessly transmit a data
3 packet to a user terminal acting as a receiver, the plurality of software instructions
4 comprising:

5 a set of instructions executed by the base station that cause the base station to
6 transmit a first transmission to the receiver that includes a set of data bits coded at a first
7 coding rate; and

8 a set of instructions executed by the base station that cause the base station to, when
9 the receiver does not successfully decode the first transmission in a first decoding, transmit

10 a second transmission to the receiver that includes the set of data bits coded at a second
11 coding rate that is less than the first coding rate.

1 45. A plurality of software instructions stored on a media that, upon execution by
2 a user terminal, cause the user terminal to act as a receiver to wirelessly receive a data
3 packet from a base station acting as a receiver, the plurality of software instructions
4 comprising:

5 a set of instructions executed by the user terminal that cause the user terminal to
6 receive a first transmission from the transmitter at a first data transmission rate, wherein the
7 first transmission includes a first transmission block portion and a second transmission
8 block portion;

9 a set of instructions executed by the user terminal that cause the user terminal to
10 attempt to decode the first transmission in a first decoding; and

11 a set of instructions executed by the user terminal that cause the user terminal to,
12 when the first decoding is not successful, request and receive a second transmission from
13 the transmitter at a second data transmission rate different from the first data transmission
14 rate, wherein the second transmission includes the first transmission block portion.

1 46. A plurality of software instructions stored on a media that, upon execution by
2 a user terminal, cause the user terminal to act as a receiver to wirelessly receive a data
3 packet from a base station acting as a receiver, the plurality of software instructions
4 comprising:

5 a set of instructions executed by the user terminal that cause the user terminal to
6 receive a first transmission from the receiver that includes data bits and first parity bits;

7 a set of instructions executed by the user terminal that cause the user terminal to

8 attempt to decode the first transmission at a first decoding rate; and
9 a set of instructions executed by the user terminal that cause the user terminal to,
10 when the first decoding is unsuccessful, request and receive a second transmission from the
11 transmitter that includes the data bits and second parity bits, wherein the second parity bits
12 are different from the first parity bits.

1 47. A plurality of software instructions stored on a media that, upon execution by
2 a user terminal, cause the user terminal to act as a receiver to wirelessly receive a data
3 packet from a base station acting as a receiver, the plurality of software instructions
4 comprising:

5 a set of instructions executed by the user terminal that cause the user terminal to
6 receive a first transmission from the transmitter, wherein the first transmission includes a set
7 of data bits coded at a first coding rate;

8 a set of instructions executed by the user terminal that cause the user terminal to
9 attempt to decode the first transmission in a first decoding;

10 a set of instructions executed by the user terminal that cause the user terminal to,
11 when the first decoding is not successful, request and receiving a second transmission from
12 the receiver that includes the set of data bits coded at a second coding rate that is less than
13 the first coding rate; and

14 a set of instructions executed by the user terminal that cause the user terminal to
15 attempt to decode the second transmission in a second decoding.